



## Evolution of a Recycle Program

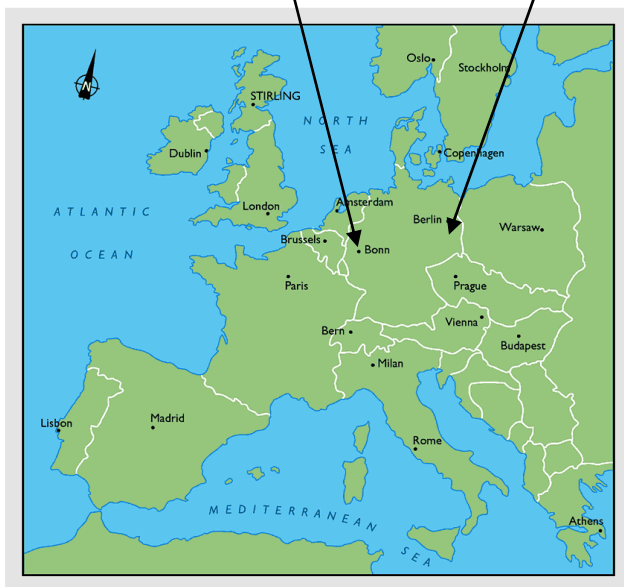
Daimler Vans Manufacturing, LLC

September 14, 2010

## Sprinter Production in Germany

**Duesseldorf – Cargo & Passenger Vans**

**Ludwigsfelde – Cab-Chassis**



**Trans - Atlantic**



**Assembly in Ladson, S.C.**





Mercedes-Benz

DAIMLER



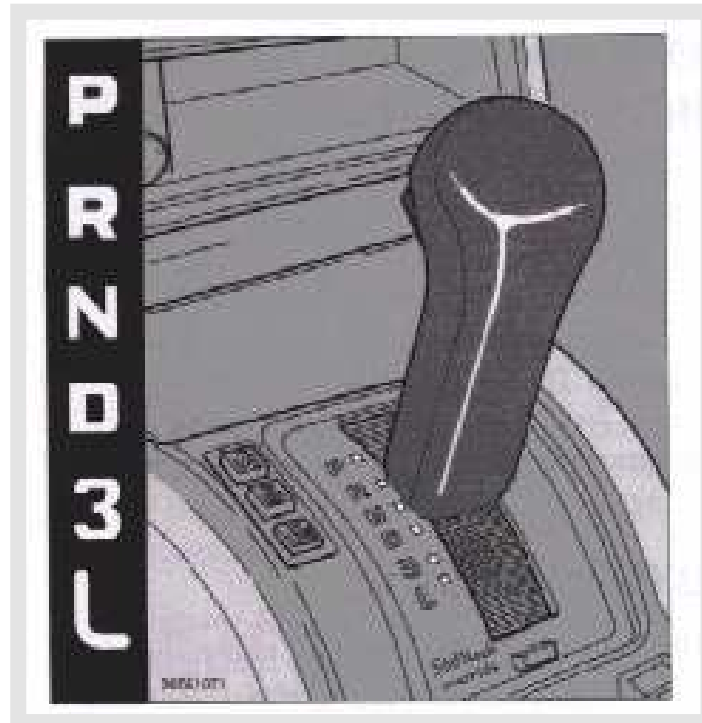
Environmental Guidelines

***“Daimler aims to achieve closed-loop material cycles. Our ultimate goal is waste-free production.”***



- ✦ Top Management Support
- ✦ Getting Started
- ✦ Characterize the Process
- ✦ Assess Wastes and Identify Options
- ✦ Cost Considerations
- ✦ Select & Implement Options
- ✦ Program Evaluation
- ✦ Sustain Program

**Question: What gear is your recycle program in?**





## Clearing the Green Hurdles

### Inconvenience

- ◆ It takes too much effort
- ◆ Too few collection sites
- ◆ Lack of space
- ◆ Requires too much time

### Identification

- ◆ What can be recycled
- ◆ What goes where
- ◆ What goes with what



### Indifference

- ◆ We do not generate significant amounts recyclable waste
- ◆ Resources are abundant
- ◆ Out of Sight - Out of mind

### Inconsistency

- ◆ Programs start then diminish with time or change in management

\* Source: Tina Green-Huskey; Mumford Indust



## Wood dunnage protects parts during trans Atlantic shipment



Phase 1



Wood shipped directly to landfill.

Phase 2



Wood damage broken down by manual labor. Very labor intensive & only select choice pieces recycled.

Phase 3



Automated process for grinding wood into usable chips. Minimal labor involved. Chips are sold to a particle board manufacturer. Steel nails and bolts are separated out during the grinding process.







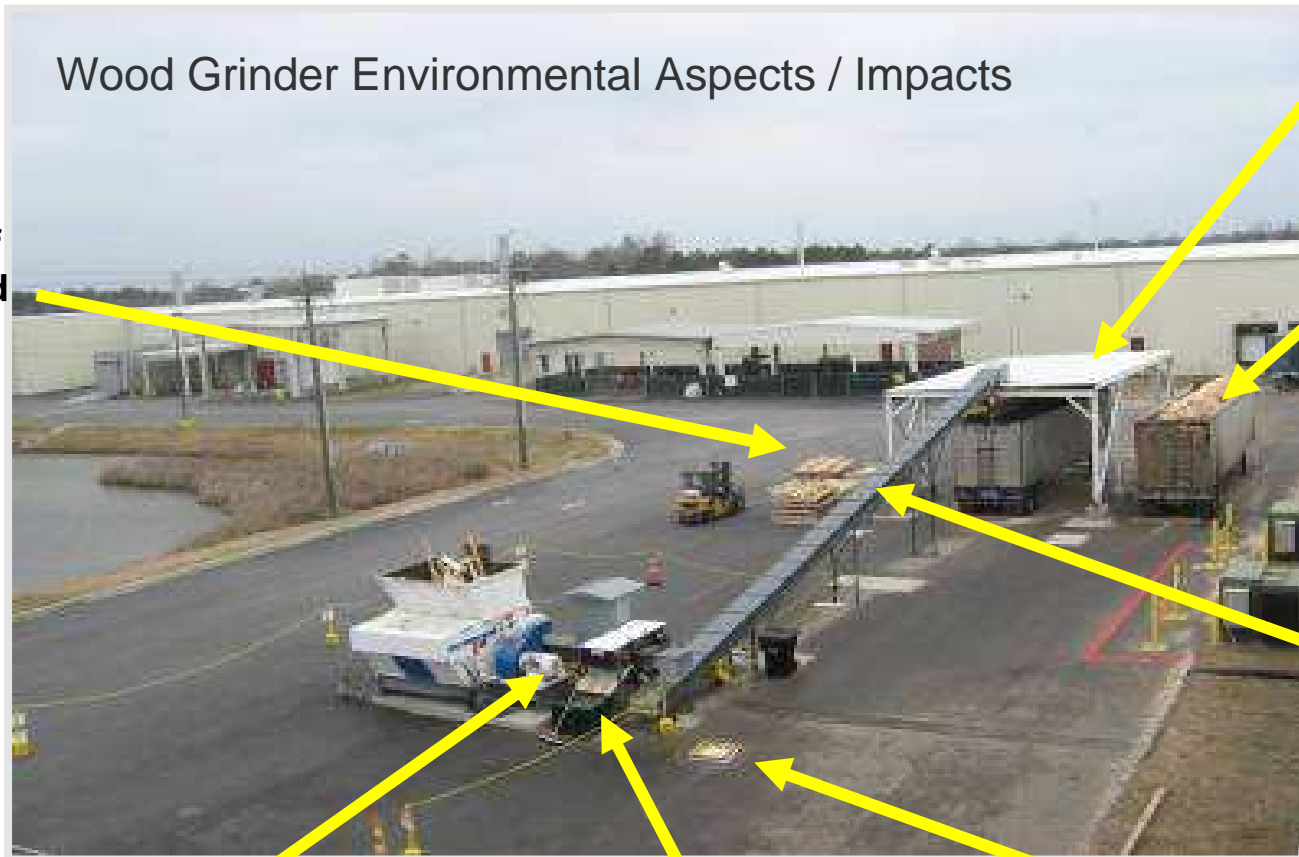
DVM Recycle Glove Program									
Invoice Date	Gloves [pairs]	Scrap	Minimum Charge	Sleeves	Scrap	Minimum Charge	Recycle Cost	Cost New Avoidance	Net Savings
9-Mar-09	510	68	\$ -	0	0	\$ -	\$271.66	\$ 918.00	\$ 646.34
1-Jun-09	216	0	\$ -	0	0	\$ -	\$101.52	\$ 388.80	\$ 287.28
19-Nov-09	173	0	\$ -	20	0	\$ 5.60	\$ 96.91	\$ 404.00	\$ 307.09
14-Jan-10	289	38	\$ -	0	0	\$ -	\$153.69	\$ 520.20	\$ 366.51
28-Jan-10	302	28	\$ -	0	0	\$ -	\$155.10	\$ 543.60	\$ 388.50
11-Feb-10	72	12	\$ -	0	0	\$ -	\$ 39.48	\$ 129.60	\$ 90.12
25-Feb-10	103	26	\$ -	2	0	\$ -	\$ 61.63	\$ 194.66	\$ 133.03
11-Mar-10	148	36	\$ -	0	0	\$ -	\$ 86.48	\$ 266.40	\$ 179.92
25-Mar-10	163	38	\$ -	0	0	\$ -	\$ 94.47	\$ 293.40	\$ 198.93
8-Apr-10	142	32	\$ -	0	0	\$ -	\$ 81.78	\$ 255.60	\$ 173.82
22-Apr-10	223	28	\$ -	0	0	\$ -	\$117.97	\$ 401.40	\$ 283.43
5/6/2010	195	42	\$ -	4	0	\$ -	\$113.39	\$ 369.52	\$ 256.13
5/20/2010	251	32	\$ -	0	0	\$ -	\$133.01	\$ 451.80	\$ 318.79
6/3/2010	243	48	\$ -	0	0	\$ -	\$136.77	\$ 437.40	\$ 300.63
6/17/2010	218	14	\$ -	0	0	\$ -	\$109.04	\$ 392.40	\$ 283.36
7/1/2010	307	50	\$ -	0	0	\$ -	\$167.79	\$ 552.60	\$ 384.81
7/15/2010	282	38	\$ -	0	0	\$ -	\$150.40	\$ 507.60	\$ 357.20
7/29/2010	213	28	\$ -	0	0	\$ -	\$113.27	\$ 383.40	\$ 270.13
8/12/2010	254	34	\$ -	0	0	\$ -	\$135.36	\$ 457.20	\$ 321.84



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## Wood Grinder Environmental Aspects / Impacts

Only small quantities of wood staged at grinder – less stormwater exposure



Canopy for stormwater protection

Chips sent to Roseburg Wood Products for beneficial reuse.

Enclosed conveyor system to reduce airborne particulates.

Wood grinder operates by electric motor vs other fuel motor options. – zero air pollution, quiet and clean.

Nails and bolts are recovered & sold to recyclers.

Storm drains covered with filters to keep loose chips from entering runoff.





## **Phase 4**

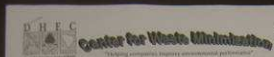
# **Zero Waste to Landfill Implementation Strategy**





## Opportunities Abound!





#### CENTER FOR WASTE MINIMIZATION ASSISTANCE REPORT

COMPANY: Danisco Vam Manufacturing, LLC  
800 Folsom Commerce Park  
Ladson, SC 29450, USA

CONTACT: Russell Revell  
Environmental Health and Safety Specialist

TELEPHONE: 843-695-8868

VISITOR: Nancy Washington

VISIT DATE: May 17, 2010

REPORT DATE: June 4, 2010

#### ABSTRACT

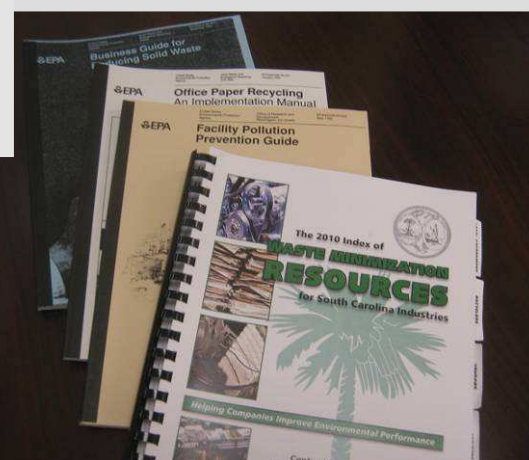
The Center for Waste Minimization (CWM) is a free, advisory service of the Department of Health and Environmental Control. The following list highlights waste minimization and compliance options generated as a result of the on-site visit at Danisco Vam Manufacturing, LLC.

1. Increase the presence of recycling containers.
2. Expand your current recycling program.
3. Work with your neighbors to increase your recyclables.
4. Perform energy reduction.
5. Ensure your break rooms are environmentally friendly.
6. Perform company-wide audits.
7. Provide education and incentives to employees.
8. Apply Lean and Energy and Lean and Environment techniques to your facility.
9. Use resources in the past area.
10. Determine whether you need to comply with the voluntary MACT.

#### BACKGROUND

Russell Revell contacted the CWM and requested a waste assessment, and May 17, 2010 was scheduled. Nancy Washington of the CWM participated in the waste assessment, starting at 9:30 AM. The visit consisted of discussion about the CWM, opportunities for

New Memo	Reply	Reply to All	Forward	Delete	Follow Up	Folder	Copy Into New	Chat	Tools	View Unread
	Who	Date	Size	Subject						
	washinsv	05/19/2010 01:40 PM	9,780	Fwd: RE: Miscellaneous Plastic Available						
	washinsv	05/19/2010 01:38 PM	8,207	Fwd: RE: Non PCB Transformers						
	washinsv	05/19/2010 01:37 PM	17,180	Fwd: RE: Non PCB Transformers						
	washinsv	05/19/2010 01:36 PM	31,242	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 06:08 PM	14,918	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 06:05 PM	17,857	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 05:36 PM	14,770	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 05:35 PM	13,686	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 12:04 PM	15,835	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 12:03 PM	9,107	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 12:02 PM	17,102	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 12:01 PM	16,713	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 11:59 AM	14,135	Fwd: RE: Non PCB Transformers						
	washinsv	05/18/2010 11:44 AM	15,966	Fwd: RE: Miscellaneous Plastic Available						
	washinsv	05/18/2010 11:43 AM	12,212	Fwd: RE: Rubber Gloves						
	washinsv	05/18/2010 11:05 AM	14,741	Fwd: RE: Miscellaneous Plastic Available						
	washinsv	05/18/2010 11:04 AM	1,123,620	Re: Nylon Available						
	washinsv	05/18/2010 10:57 AM	15,994	Fwd: RE: Miscellaneous Plastic Available						
	washinsv	05/18/2010 10:54 AM	12,244	Fwd: RE: Miscellaneous Plastic Available						
	washinsv	05/18/2010 10:49 AM	8,869	Fwd: RE: Miscellaneous Plastic Available						
	washinsv	05/18/2010 10:12 AM	5,663	Geocycle						
	washinsv	05/18/2010 09:23 AM	9,240	Re: dym: info request on paint booth bmp						
	washinsv	05/13/2010 08:15 AM	109,129	Re: SC DHEC Center for Waste Minimization Visit						



# **DVM**

## **Zero Waste to Landfill**

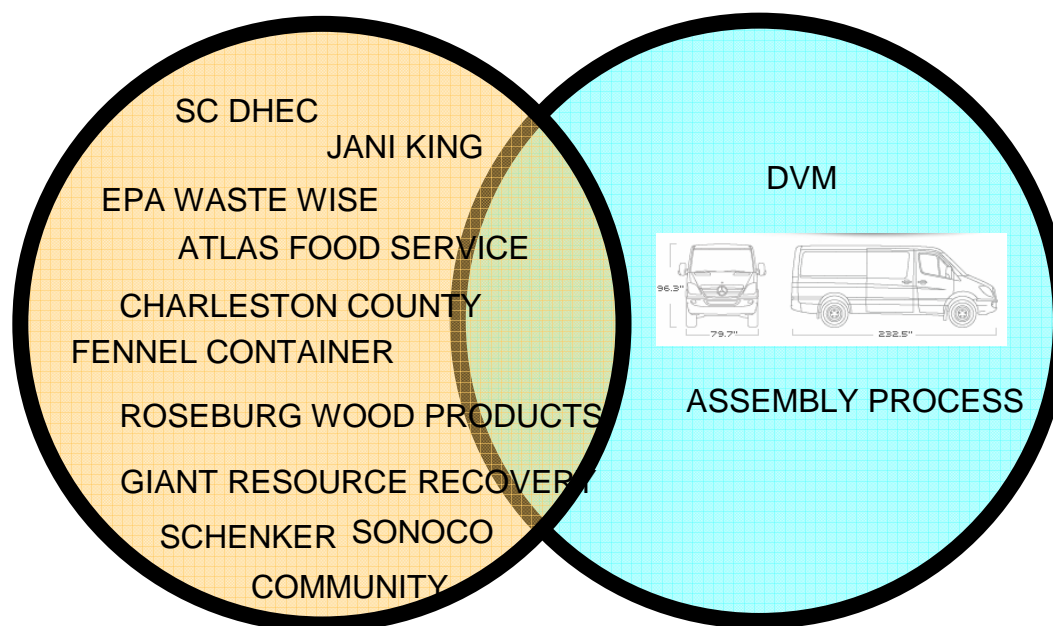
### **Recycle Team**



*Amy Bandy  
Susan Black  
Katherine Bergmann  
Cheri Boese  
Marcia Grab  
Mamie Herrmann  
Dwight Kurasaka  
Eric Lawing  
Darryl Mcvay  
Brian Owens  
Russell Revell  
Shelly Taylor*



**It is going to take a village!**

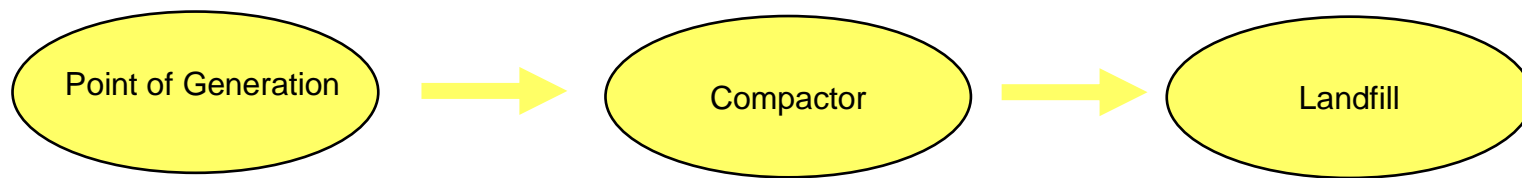




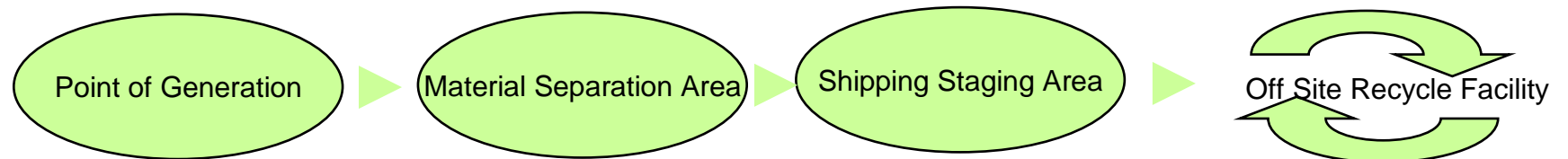




### Typical Wastestream Flow



### Typical Recyclestream Flow



Point of Generation



Material Separation Area



Shipping Staging Area



Off Site Recycle Facility

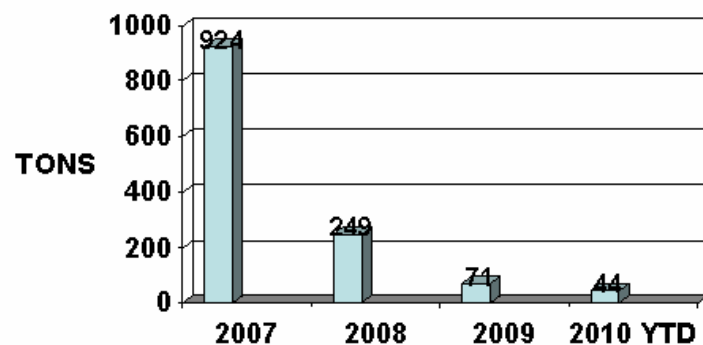




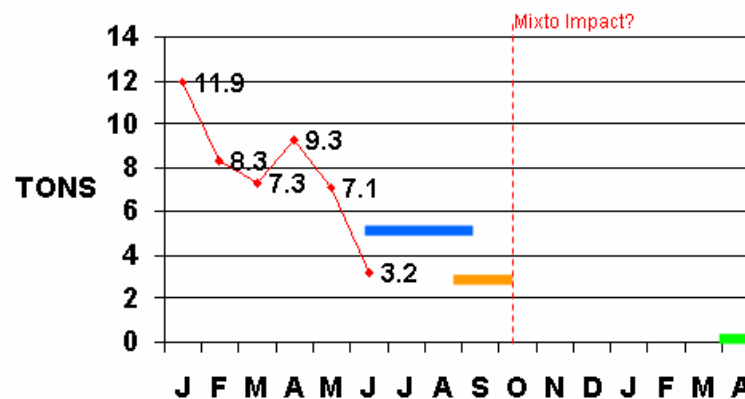




## DVM LANDFILL TONNAGE



## DVM LANDFILL TONS PER MONTH



Goal: Zero waste to landfill by Earth Day 2011

Target: Reduce plastics; 5 tons per month June 2010

Target: Reduce wood blocks; 3 tons per month August 2010

Target: Achieve zero waste to landfill April 22, 2011

Mixto projected impact: seats – 13 tons per month, floor boards – 8 tons per month





***Finished product – built with pride & care for the environment.***

***Thank you!***

